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Arctic - Yukon - Kuskokwim Sustainable Salmon Initiative

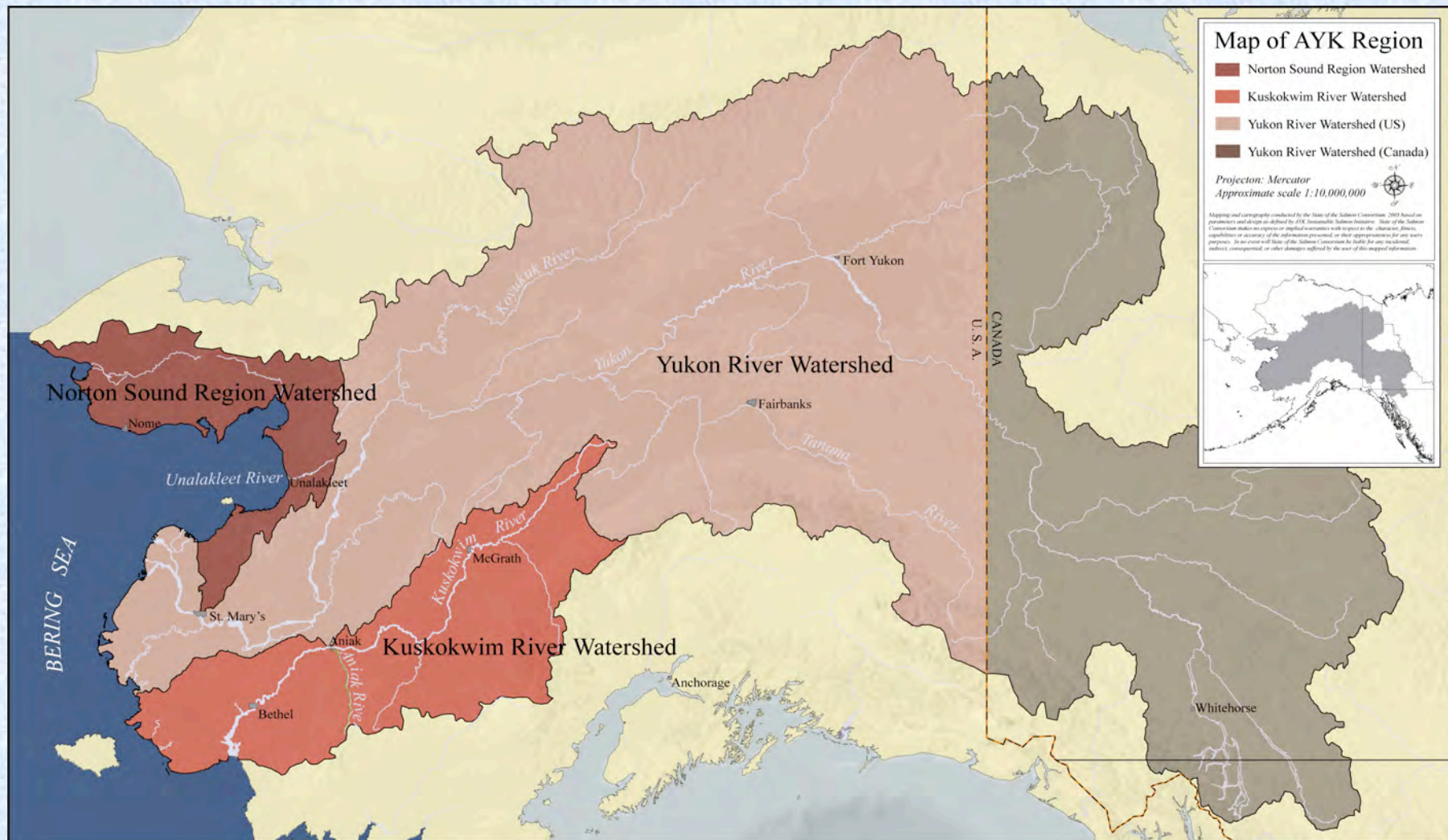
Arctic
Yukon
Kuskokwim
Sustainable
Salmon
Initiative

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AYK SSI Region



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WHY AN AYK SSI??

Kuskokwim River Watershed - State Economic Fish Disaster
Declaration years: 1997-1998-2000-2001-2002

Norton Sound Watershed - State Economic Fish Disaster
Declaration years: 2000-2001-2002

Yukon River Watershed - State Economic Fish Disaster
Declaration years: 1997-1998-2000-2001-2002

Kuskokwim Region— Federal Commercial Fish Failure
Declaration year: 1997

Yukon, Kuskokwim and Norton Sound
Federal Fisheries Disaster
Declaration year: 2000

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WHO IS THE AYK SSI

~SIGNATORIES to the MOU~

- Alaska Department of Fish and Game
- Association of Village Council Presidents
- Tanana Chiefs Conference
- Kawerak Incorporated
- Bering Sea Fishermen's Association
- U.S. Fish and Wildlife Service
- NOAA Fisheries



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STRUCTURE OF THE AYKSSI

- Steering Committee
- Scientific and Technical Committee
- Staff

Appropriations since 2002 totaling \$21 million
Pacific Coastal Salmon Recovery Fund



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AYK SSI Committee Members 2006

Steering Committee

John White – Chair

Jim Simon

Tim Andrew

Mike Smith

Weaver Ivanoff

Gene Sandone

Rod Simmons

Peter Hagen

Scientific and Technical Committee

Chris Zimmerman – Chair

Marianne See

Chuck Krueger

Eric Volk

Jack Stanford

Kate W. Myers



Staff (c/o Bering Sea Fishermen's Association):

Karen Gillis, Program Director & Joseph Spaeder, Research Coordinator

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WHAT IS THE AYK SSI?

Purpose of the AYK SSI is to collaboratively develop & implement a comprehensive research plan to understand the causes of the declines and recoveries of AYK salmon.

- Planning –Facilitating coordination and cooperation among research and management institutions by developing a dynamic, comprehensive, long-range Research and Restoration Plan for the region.
- Projects –Funding high quality research projects addressing pressing fishery information needs in the region.

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FOUNDATION OF THE AYK SSI

VISION: By 2012 we will have expanded knowledge to assure sustainable uses of wild salmon for future generations (2004)

- We will develop a self-sustaining, coordinated research effort that continues into the future;
- We will have completed a capacity building program that enables rural residents of the AYK region to effectively participate in co-management of the AYK salmon resource; and
- We will assure broad understanding, acceptance, and commitment to implement our research plan.



THE AYK SSI CHALLENGE

- Fund high priority research needs, while
- Developing a long-range full life-cycle Research and Restoration Plan in order ensure that available funds target highest priority needs.
- Coordinate and collaborate with wide variety of fisheries partners.



- **AYK SSI has:**

developed an AYK Research & Restoration Plan that takes into account existing research plans of the region.

This plan goes beyond providing a single, static prescription of research activities. Instead, it provides an ongoing process whereby research activities are guided, selected, reviewed, and modified over time to reflect the outcome and knowledge obtained from research and restoration activities

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AYK Steering Committee

NRC Committee
– themes and
priorities

**Scientific Technical
Committee**

Science Plan (unveiled 6/30/06)

- Salmon life cycle, link freshwater and marine systems, understand variation.
- Determine what we need to know.
- Document what is known.
- Identify information gaps.
- Establish research themes and priorities.

Workshop and
Symposium –
Summary of
ecological and
TEK
information.

Outcome – Improved understanding and management of salmon to sustain the salmon resources of the AYK region.

Norton Sound
Science Plan

Yukon River
Planning

Kuskokwim River
Planning

On-going ADFG
Research

North Pacific
Research Board

NMFS BASIS
Bering Sea Plan

FWS Fisheries
Information
Service



Conceptual Foundation
informed by Fundamental Assumptions

Research & Restoration Program Goal

**Overarching Questions
& Three Conceptual Frameworks**

Framework 1

**Salmon Life
Cycle**

Themes

Hypotheses
Key variables
Sample research
questions

Framework 2

**Human Systems
& Salmon**

Themes

Hypotheses
Key variables
Sample research
questions

Framework 3

**Synthesis &
Prediction**

Themes

Hypotheses
Key variables
Sample research
questions

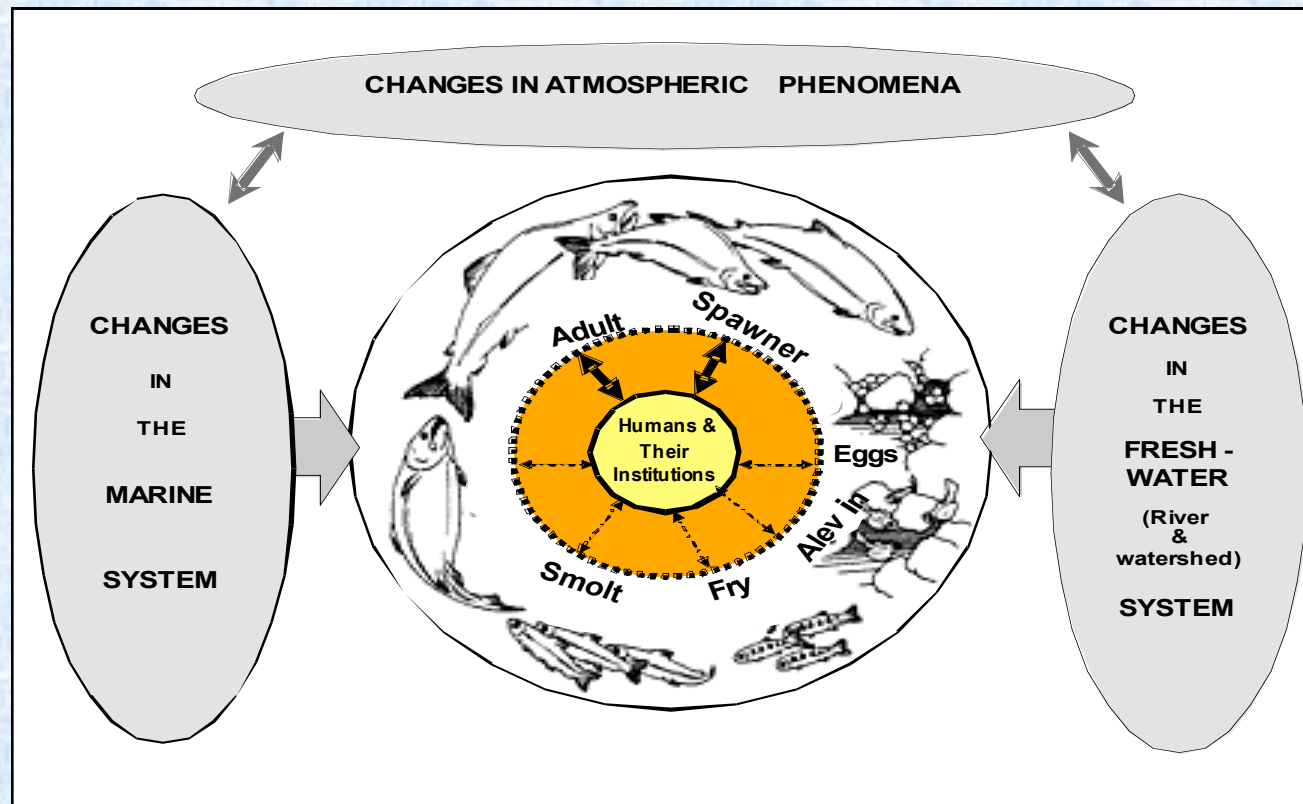
Research Plan Structure

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The conceptual foundation connects the physical, biological, and human processes which affect salmon abundance



Goal: To understand the trends and causes of variation in salmon abundance and fisheries through the assembly of existing information, gaining new information, and improving management and restoration techniques through a collaborative and inclusive process.



AYK SSI PROGRAM GOAL

The Goal of the AYK SSI Research and Restoration Program is to understand the trends and causes of variation in salmon abundance and fisheries in the AYK Region.

- *Assemble existing information*
- *Acquire new information*
- *Improve management and restoration techniques*





AYK Research & Restoration Plan Overarching Questions

Salmon Abundance in Space and Time

- What has been the historic variability in salmon abundance in different river systems and has this variability increased, decreased, or stayed the same over the past three decades?
- What physical and biological processes cause changes in salmon abundance at annual, decadal, and century or longer time scales?
- Do all processes have important effects on salmon populations everywhere, or are some processes important only to specific rivers and their populations (e.g., influences of marine-derived nutrients from decaying adults on subsequent generations)?

Human Use Patterns and Processes

- How does human use at local, regional, and global scales affect salmon abundance over short- and long-time scales?
- What variables have caused human use to change over time and location?

Synthesis, Integration, and Application

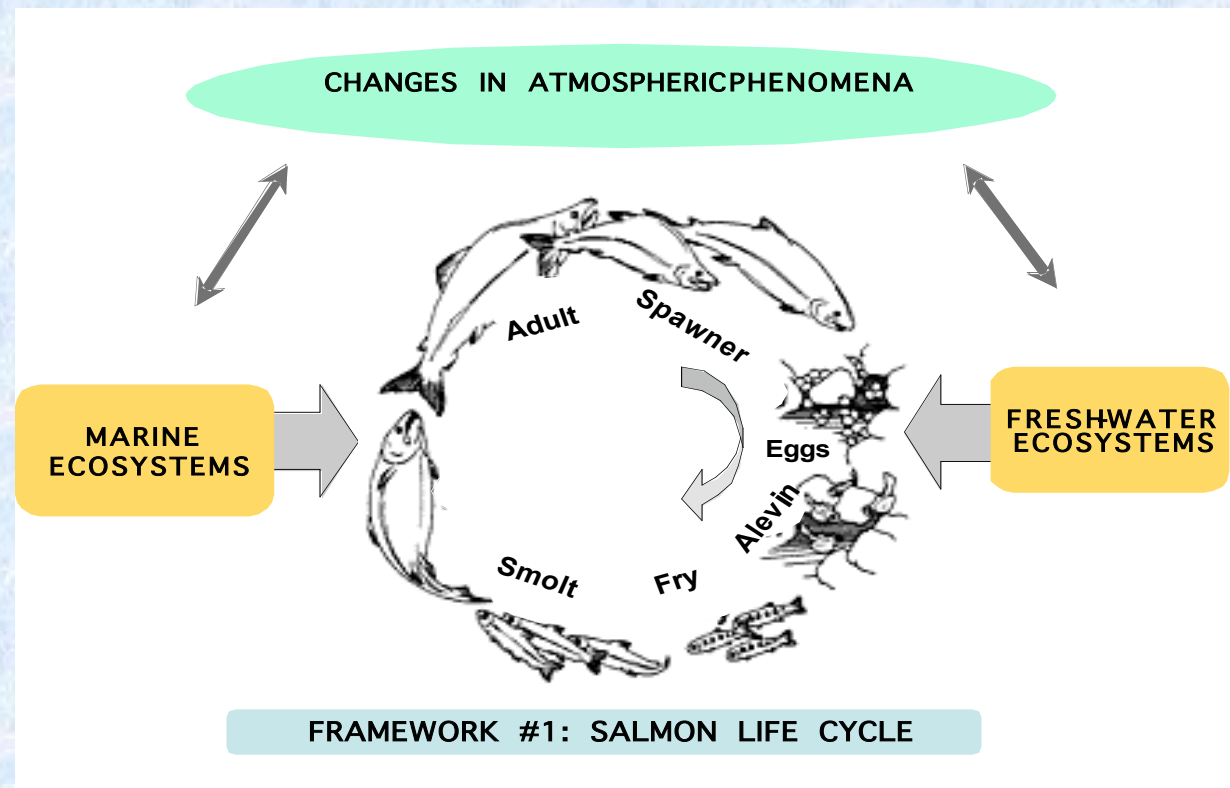
- How do the physical, biological, and human processes interact with each other to cause salmon abundance to vary, and can these interactions be used to successfully reevaluate historic abundance and forecast future salmon abundance?
- What are the best management practices to use which incorporate a growing understanding of the processes which affect salmon abundance and ensure the sustainability of the fisheries?

Three frameworks serve as a guide to the building of knowledge in a systematic fashion and provide an umbrella under which research themes, hypotheses and questions are situated. The frameworks, which represent organizational constructs to focus inquiry into the conceptual foundation and to address the overarching questions, are as follows:

Framework 1

Salmon Life Cycle

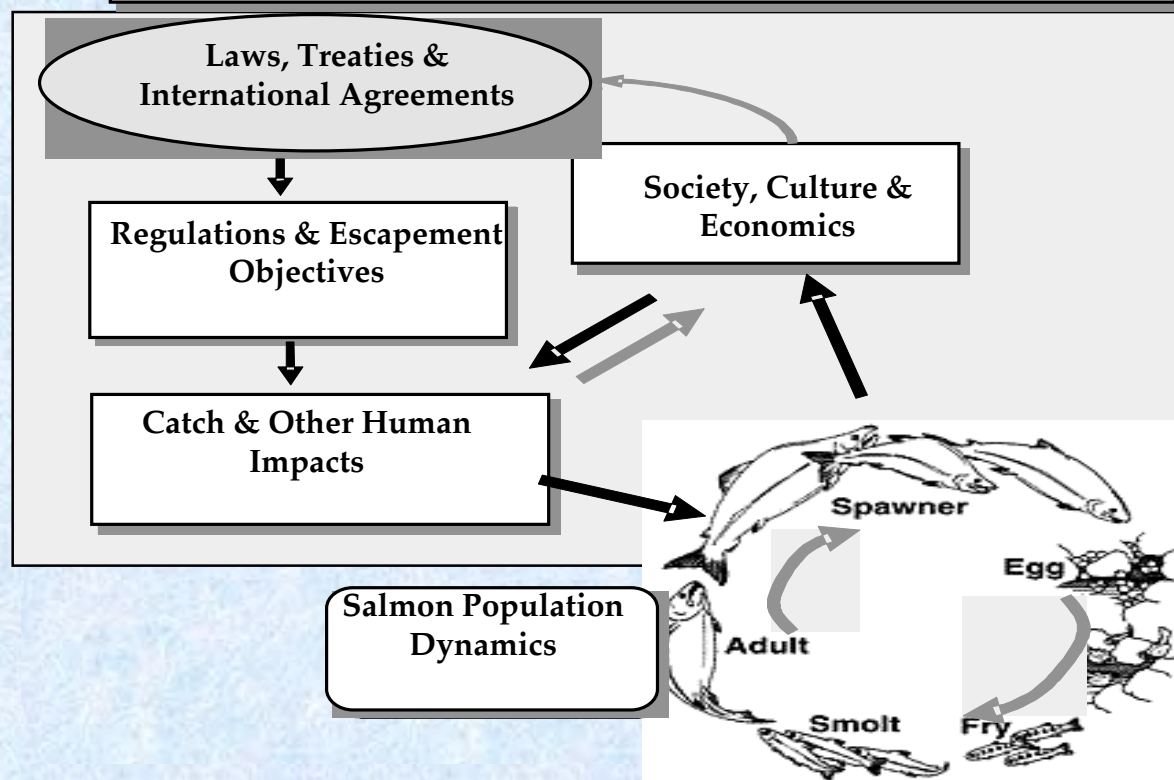
organizes studies around the life stages of the salmon and the three sources of variation (marine, freshwater, and atmospheric systems) depicted in the conceptual foundation.





Framework #2:

Human Systems & Sustainable Salmon



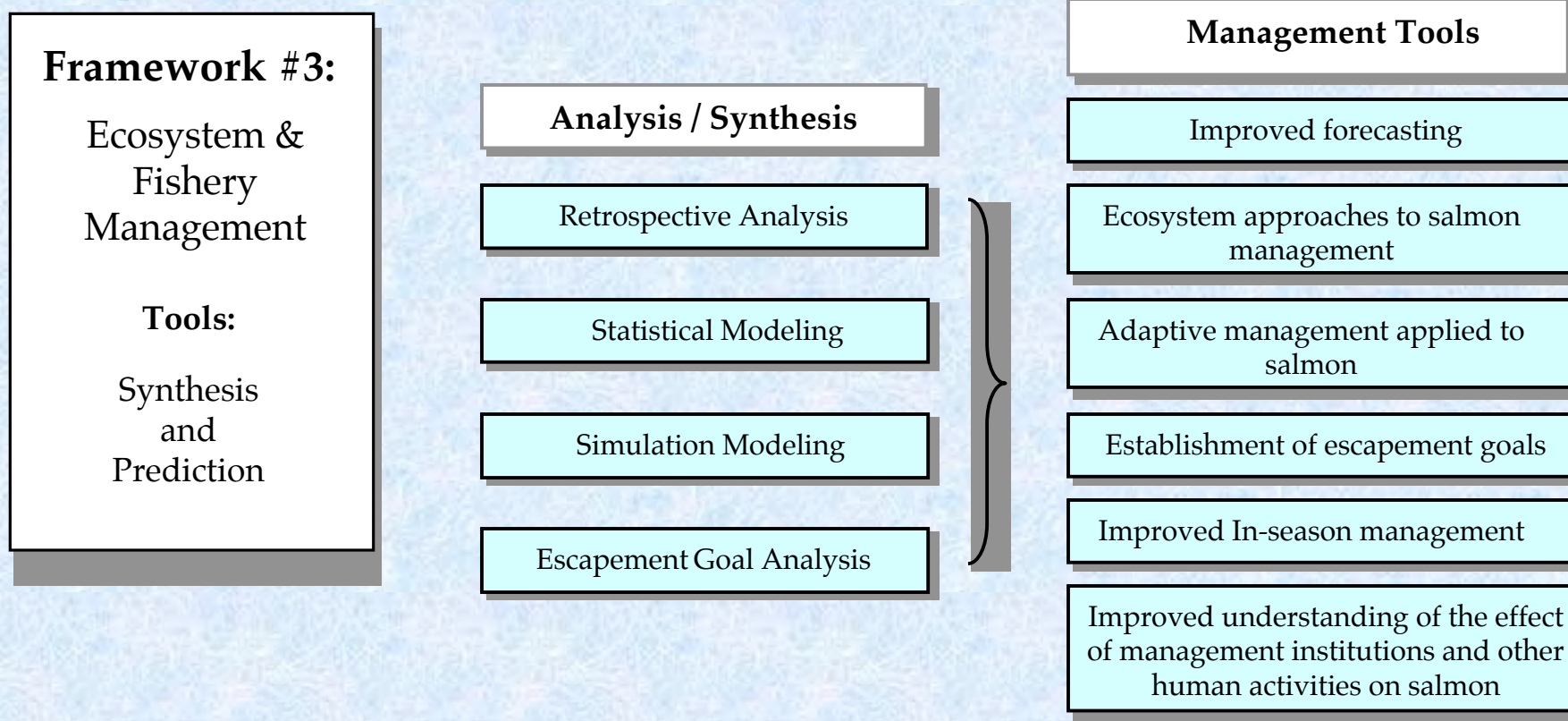
Framework 2

Human Systems explores understanding the phenomena of humans and their institutions, as well as their interactions with the salmon life cycle. This framework encompasses the social, economic, and political linkages, including laws and international agreements which govern salmon fisheries.



Framework 3

Synthesis and Prediction Framework examines ways of synthesizing the knowledge gained from the first two frameworks to develop an integrated understanding of the AYK ecosystem. The third integrative framework links the previous two frameworks by seeking to 1) to better understand the causes of variation and resilience of the AYK salmon and (2) to refine and develop management tools.



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AYK SSI FUNDED PROJECTS 2006

- **Using Local Traditional Knowledge to Understand Long-Term Variability in Norton Sound Salmon Populations**
Kawerak, Incorporated
- **Methods for setting escapement goals in the AYK region**
Ray Hilborn, Milo Adkison, Jack Stanford, Daniel Goodman, Eric Knudsen, Brian Bue
- **Selective Fishery Impacts on Yukon R. Chinook**
U.S. Fish & Wildlife Service
- **Factors Affecting Juvenile AYK Chum Salmon Growth and Condition**
NOAA Fisheries
- **Retrospective Analyses of Chum & Coho Salmon**
Natural Resource Consultants
- **Landscape genetics of AYK salmon populations**
U.S. Fish & Wildlife Service, Conservation Genetics Laboratory
- **Juvenile Salmon Migration, Kwethluk River, Alaska**
U.S. Geological Survey
- **Natural indicators of salmon run abundance and timing**
Yukon River Drainage Fisheries Association
- **Kuskokwim Chinook Salmon Run Reconstruction**
- **Stock-specific forecast of AYK Chinook salmon**
- **Kuskokwim sockeye salmon investigations**
Alaska Department of Fish & Game

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AYK SSI 2007 REQUEST FOR PROPOSALS

2007 Funding Level:	\$4,500,000.00
Opening Date:	June 30, 2006
Deadline for Submission:	October 16, 2006 11:59PM
Final selection of projects:	January 30, 2007
Project Start Dates:	May 1, 2007 or later

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AYK SSI SYMPOSIUM

Sustainability of the Arctic-Yukon-Kuskokwim Salmon Fisheries
What do we know about salmon ecology, management, and fisheries?

February 6-9, 2007, Captain Cook Hotel, Anchorage, Alaska

Symposium Goal

To communicate what is known, and needs to be known, about ecological processes that cause change in salmon populations, effects of varying salmon runs on rural communities management of salmon fisheries in the AYK region

Session Topics

- Biology and ecology of salmon - current state and analysis of causes of variation
- Human Dimensions of AYK Salmon
- Fishery Management Strategies: Lessons from Local, Regional, and International Experiences
- Synthesis and Integration: Intersections among Ecology, Local Knowledge, and Management to Support Sustainable Salmon Fisheries

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www.aykssi.org

